SUPPORT FOR THE AMENDMENTS

Claims 1, 3, 4, 8-19, 23, and 24 has been amended.

Claims 20-22 and 25-29 have been canceled.

Claim 30 has been added.

Support for the amendment of Claims 1, 3, 4, 8-19, 23, and 24, as well as new Claim 30 is provided by original Claims 1-29.

No new matter is believed to be entered by the present amendments.

REMARKS

Claims 1-19, 23, 24, and 30 are pending in the present application.

The rejection of Claims 27-29 under 35 U.S.C. §101 is obviated by cancellation of the rejected claims. Withdrawal of this ground of rejection is requested.

The rejection of Claims 24-26 under 35 U.S.C. §112, second paragraph, is obviated by amendment.

Claims 24-26 have been rejected as missing steps. Applicants have canceled Claims 25 and 26, as well as rewritten Claim 24 to clearly provide active method steps. Thus, this ground of rejection is now moot.

Withdrawal of this ground of rejection is requested.

The rejection of Claims 19-21 under 35 U.S.C. §112, second paragraph, is obviated by amendment.

Claims 19-21 have been rejected as being duplicates of each other. Applicants have canceled Claims 20 and 21, as well as rewritten Claim 19 to improve the clarity thereof. Thus, this ground of rejection is now moot.

Withdrawal of this ground of rejection is requested.

The rejection of Claims 1-26 under 35 U.S.C. §112, first paragraph (enablement), is respectfully traversed.

The Examiner alleges that the specification fails to enable hydrates of the claimed compounds. Applicants disagree.

Contrary to the Examiner's allegation, Applicants submit that it is well within the purview of the skilled artisan to recognize the presence of hydrates as presently claimed by looking into the elementary analysis data provided in the working examples of this application. The process is required to take a drying step in combination with reduced pressure or to use a drying agent. Thus, it is apparent that the hydrate of the present invention is quire different from such a substance that could be misinterpreted as a mere water residue. Accordingly, Applicants submit that the skilled artisan can readily make and use the full scope of the claimed invention without undue experimentation.

Withdrawal of this ground of rejection is requested.

The rejection of Claims 22-23 under 35 U.S.C. §112, first paragraph (enablement), is respectfully traversed.

The Examiner recognizes that the specification is enabling for treating bacterial infection. Consistent with this recognition, Applicants have limited the claims subject to this rejection to a method of treating infectious disease. Applicants submit that, as recognized by the Examiner, the specification does enable the artisan to treat infectious diseases of which bacterial infection is a prominent genus.

Withdrawal of this ground of rejection is requested.

The rejection of Claims 1-26 under 35 U.S.C. §103(a) over Takemura, Saito, and Ding, is respectfully traversed.

The Examiner alleges that Claims 1-26 are obvious in view of Takemura, Saito, and Ding. However, the Examiner does not identify which of the four Takemura references listed in Form 892 attached to the Office Action she is relying upon or whether she is relying upon all four. Further, the Examiner does not provide any explanation of how Saito (US 6,825,353) applies.

Indeed, Applicants submit that Saito is unrelated to the present invention as in most embodiments this references only has a halogen at the 7-position of the quinolone skeleton as opposed to the required 3-(1-aminocycloalkyl)pyrrolidinyl group substitution at the 7-position in the present invention. When the 3-(1-aminocycloalkyl)pyrrolidinyl group is present at the 7-position, Saito has a methyl group at the 8-position and a primary amine at the 5 position compared to the cyano group and the hydrogen at the respective positions in the present invention. Further, there is no disclosure or suggestion in Saito to modify their compounds to arrive at those presently claimed.

Ding (US 7,238,694) is cited as disclosing a quinolone skeleton similar to the claimed invention in Figure 2 and a N,1-dimethylpyrrolidin-3-amine in Figure 1. The Examiner alleges that, when combined, they make the presently claimed invention. However, there is no suggestion in Ding to make this modification as alleged and even if it were done it would not be a compound of the present invention. Ding disclose rifamycin derivatives that are connected to a pharmacophore, which might be a quinolone, via a linker. Thus, Ding is related to an invention that is related to a derivative effective against drug-resistant microbes having a rifamycin moiety covalently linked to a linker. What the Examiner is referencing can only be viewed as a part of the whole compound (i.e., linked to rifamycin). There is no

suggestion in Ding for any quinolone containing a 3-(1-aminocycloalkyl)pyrrolidinyl group at the 8-position as presently claimed.

The Examiner also refers to Takemura, apparently generically, but this is also not a fair allegation. US 6,121,285 and US 6,184,388 are related to WO 97/19072, which is identified as patent document 2 in the specification and is discussed on pages 3-4. Specifically, although these references disclose a 3-(1-aminocycloalkyl)pyrrolidinyl group at the 7-position of the quinolone skeleton, it is stated that "all the quinolonecarboxylic derivatives specifically disclosed in the above-mentioned applications have a common feature that the 8-position on the quinolone skeleton is substituted by a methyl group or a methoxy group, or that a methoxy group forms a ring with the nitrogen atom on the quinolone structure. These compounds exhibit relatively strong antibacterial activities as compared with conventional quinolone derivatives. However, they have strong acute toxicity and test positive in a micronucleus test, which is an indicative test for genetic toxicity."

Even if the Examiner were to allege that the compounds disclosed in the Takemura patents overlaps with or is co-extensive with the compounds of the present invention, at best this would represent a *prima facie* case of obviousness. It is well settled that a *prima facie* case of obviousness, if it were to exist which it does not, can be overcome by evidence of unexpected results. To this end, the present inventors have **submit herewith** a Declaration under 37 C.F.R. §1.132 to demonstrate that the presently claimed compounds are superior to those disclosed by the cited references in regard to their antibacterial activities and the interaction with hERG-potassium ion channel. The comparative experiments in the enclosed Declaration provide evidence showing that the presently claimed quinolone compounds having a cyano group at its 8-position are remarkably excellent in antibacterial activities and the action on hERG current inhibition as compared to counterpart compounds having a

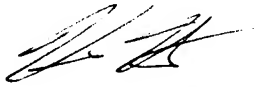
methyl group or a methoxy group instead of a cyano group. Applicants submit that the evidence set forth in the Declaration is sufficient to rebut even a *prima facie* case of obviousness.

Withdrawal of this ground of rejection is requested.

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.
Norman F. Oblon



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